

BEFORE THE
Federal Communications Commission
WASHINGTON, D.C. 20554

In the Matter of)	
)	
Amendment of Parts 2, 25 and 87 of the)	
Commission's Rules to Implement Decisions from)	
World Radiocommunication Conferences)	ET Docket No. 02-305
Concerning Frequency Bands Between 28 MHz)	
And 36 GHz and to Otherwise Update the Rules in)	
This Frequency Range)	
 Amendment of Parts 2 and 25 of the)	
Commission's Rules to Allocate Spectrum For)	RM-10331
Government and Non-Government Use in the)	
Radionavigation-Satellite Service)	
 To: The Commission		

COMMENTS OF LOCKHEED MARTIN CORPORATION

Raul R. Rodriguez
Stephen D. Baruch
David S. Keir
Leventhal, Senter & Lerman PLLC
2000 K Street, N.W., Suite 600
Washington, D.C. 20006
(202) 429-8970
(Of Counsel)

Gerald Musarra
Vice President
Trade and Regulatory Affairs

Lockheed Martin Corporation
Crystal Square 2, Suite 403
1725 Jefferson Davis Highway
Arlington, Virginia 22202

February 10, 2003

Summary

Lockheed Martin welcomes the Commission's solicitation of comments on the proposals in its *NPRM* pertaining to new allocations for the Radionavigation Satellite Service ("RNSS") and is generally supportive of the proposals that the Commission has made. Lockheed Martin believes, however, that some changes need to be made before the allocations proposed in the *NPRM* are finalized.

First and foremost, Lockheed Martin strongly urges the Commission to modify its proposed course by allocating domestically the entire global RNSS band from 1164-1215 MHz, rather than by allocating only the 1164-1189 MHz portion of the global "L5" RNSS allocation. With respect to concerns raised at the time Lockheed Martin's Petition for Rule Making was filed that insufficient sharing studies had been done to act on the entire allocation, the current state of technical compatibility studies does not justify a restricted domestic allocation. In the last year, technical studies under Resolution 605 (WRC-2000) have been completed for the entire 1164-1215 MHz band. As a result of these studies, a consensus is emerging within the ITU on how to assure by regulation the protection of ARNS systems across the 1164-1215 MHz band from the aggregate emissions of all RNSS satellites and systems.

Moreover, the Commission should seek to avoid acting in this proceeding in a manner that would be perceived abroad as attempting to exclude the availability of the upper portion of the global RNSS band for service in North America. If limitations on such use should prove necessary in the future, on the basis of technical or regulatory circumstances specific to a particular proposed request for use of the allocation, a licensing proceeding would be the right place for such a determination to be made.

In addition, Lockheed Martin believes that there are a few other areas where the Commission should make adjustments to its proposals to account for recent developments in international studies and associated fora, or to reflect changed circumstances. For example, the outcome of ITU-R studies that were concluded in the Fall of 2002 render moot the need for proposed U.S. footnote Usyyy, and thus the proposed footnote can now be deleted.

Furthermore, due to recent developments, the Commission should remove the government-only designation from the RNSS “L2” band at 1215-1240 MHz, and extend the domestic RNSS allocation to the full 1240-1300 MHz band, consistent with the actions taken at the 2000 World Radiocommunication Conference (“WRC-2000”). Removal of the government-only restriction would reflect the steps that are being taken domestically to implement the March 1998 announcement that a civil signal would be implemented on the GPS system at L2.

With respect to both the L2 and L5 bands, Lockheed Martin is convinced that modification of the domestic allocation table in Section 2.106 of the Commission’s Rules to include the full WRC-2000 RNSS allocation at 1164-1215 MHz and the entire new RNSS allocation at 1260-1300 MHz will ensure that adequate spectrum is available for multiple RNSS systems, and will promote U.S. interests overall at the upcoming WRC. At the same time, as the rulemaking action refers to allocations only, the U.S. would not lose any flexibility to address – through licensing or other similar actions – future U.S. RNSS operations that would otherwise compromise existing uses of the band.

TABLE OF CONTENTS

Summary	ii
I. INTRODUCTION AND STATEMENT OF INTEREST	3
A. Lockheed Martin has had a Leading Role in the Development of Satellite Technology to Augment GPS	3
B. GPS Augmentation is Essential to Achieving Enhanced Air Traffic Management Capability and Safety	5
1. The Current Air Traffic Management System Is Under Stress	5
2. Additional RNSS Spectrum is Critical to Achieving Enhanced GPS	6
II. DISCUSSION	8
A. The Commission Should Allocate Domestically the Full 1164-1215 MHz Band Made Available At WRC-2000 For Both Government and Non-Government RNSS Operations (Space-to-Earth) on a Co-Primary Basis	8
B. The Commission Should Permit Both The 1164-1215 MHz and 1559-1610 MHz Bands To Be Used For Space-to-Space Transmissions	13
C. The Commission Should Remove the Government-Only Restriction From the L2 Band and Conform the Domestic Allocation to the Actions Taken at WRC-2000	14
D. While It May Be Procedurally Appropriate to Defer to a Separate Proceeding Modifications to Part 25 to Include the RNSS Bands, the Commission Should Not Delay the Steps Necessary to License Systems In These Bands	15
E. The Commission Should Not Permit Active Sensor Operation in the Earth Exploration-Satellite Service and the Space Research Service On a Co-Primary Basis with RNSS in the Band 1215-1300 MHz Without Further Study	17
III. CONCLUSION	17

BEFORE THE
Federal Communications Commission
WASHINGTON, D.C. 20554

In the Matter of)	
)	
Amendment of Parts 2, 25 and 87 of the)	
Commission's Rules to Implement Decisions from)	
World Radiocommunication Conferences)	ET Docket No. 02-305
Concerning Frequency Bands Between 28 MHz)	
And 36 GHz and to Otherwise Update the Rules in)	
This Frequency Range)	
 Amendment of Parts 2 and 25 of the)	
Commission's Rules to Allocate Spectrum For)	RM-10331
Government and Non-Government Use in the)	
Radionavigation-Satellite Service)	

To: The Commission

COMMENTS OF LOCKHEED MARTIN CORPORATION

Lockheed Martin Corporation ("Lockheed Martin"), pursuant to Sections 1.415 and 1.419 of the Commission's Rules, hereby comments on the Commission's above-captioned Notice of Proposed Rule Making ("*NPRM*"), in which the Commission proposes to amend Section 2.106 of its rules to incorporate allocations made at recent World Radiocommunication Conferences. Among the allocations proposed by the Commission is one for additional spectrum for the Radionavigation-Satellite Service ("RNSS").

Lockheed Martin welcomes the Commission's solicitation of comments on the RNSS proposals in the *NPRM*, and is generally supportive of the proposals the Commission has made. Indeed, this proceeding stems in part from a Petition for Rule Making ("Petition") that Lockheed Martin filed in 2001 seeking the domestic implementation of the RNSS allocation in the 1164-1215 MHz band, for both government

and non-government users, and the modification of the allocation at 1559-1610 MHz to permit use in the space-to-space direction.¹ Lockheed Martin believes, however, that some changes need to be made before the allocations proposed in the *NPRM* are finalized.

First and foremost, Lockheed Martin observes that the Commission's proposal in the *NPRM* deviates significantly from Lockheed Martin's Petition with regard to the portion of the international RNSS "L5" band at 1164-1215 MHz that would be included in the U.S. Table of Frequency Allocations in Section 2.106 of the Commission's Rules. Lockheed Martin strongly urges the Commission to modify its proposed course by allocating domestically the entire global RNSS band from 1164-1215 MHz, rather than by allocating only the 1164-1189 MHz portion of the global "L5" allocation.

In addition, there are a few areas where Lockheed Martin believes that the Commission should make adjustments to its proposals to account for recent developments in international studies and associated fora, or to reflect changed circumstances. For example, the outcome of ITU-R studies that were concluded in the Fall of 2002 render moot the need for proposed U.S. footnote USyyy (*see NPRM* at ¶ 41 and Appendix), and thus the proposed footnote can now be deleted.² Furthermore, due to recent developments, the Commission should remove the government-only designation from the RNSS "L2" band at 1215-1240 MHz, and extend the domestic RNSS allocation to the full 1240-1300 MHz band, consistent with the actions taken at the 2000 World Radiocommunication Conference ("WRC-2000"). Removal of the government-only restriction is needed to

¹ See Lockheed Martin Petition for Rule Making, RM-10331, filed September 28, 2001.

² See note 19, *infra*, and associated text.

reflect the steps that are being taken domestically to implement the March 1998 announcement that a civil signal would be implemented on the GPS system at L2.³

With respect to both the L2 and L5 bands, Lockheed Martin believes that modification of the domestic allocation table in Section 2.106 of the Commission's Rules to include the full WRC-2000 RNSS allocation at 1164-1215 MHz and the entire new RNSS allocation at 1260-1300 MHz will ensure that adequate spectrum is available for multiple RNSS systems, and will promote U.S. interests overall at the upcoming WRC. At the same time, as the rulemaking action refers to allocations only, the U.S. would not lose any flexibility to address – through licensing or other similar actions – future U.S. RNSS operations that would otherwise compromise existing uses of the band.

I. INTRODUCTION AND STATEMENT OF INTEREST

A. Lockheed Martin has had a Leading Role in the Development of Satellite Technology to Augment GPS.

Lockheed Martin Corporation is one of the world's largest diversified defense, aerospace and advanced technology companies, and is a leader in the design, development, engineering, and production of spacecraft, launch vehicles, and both terrestrial and space communications systems. The company has been involved in the Global Positioning System ("GPS") from the earliest stages of its development. Lockheed Martin has manufactured 21 GPS IIR satellites, 7 of which are now in orbit and on station, providing precise navigational information for government, commercial and private users. Eight of these IIR satellites are now being modified to provide a new civil navigation

³ The White House, Office of the Vice President, "Vice President Gore Announces Enhancements to the Global Positioning System That Will Benefit Civilian Users Worldwide" (White House Press

service at 1127.6 MHz as well as new military services at both 1575.42 and 1227.6 MHz. The company is also responsible for launch and flight operations support of the GPS IIR, including development of constellation management software and other mission critical elements of the system. Lockheed Martin is also the principal provider of the GPS Operational Control System, which commands the satellite constellation and monitors its performance.

As the Commission notes in the *NPRM*, Lockheed Martin currently provides the geostationary component of the Wide-Area Augmentation System (“WAAS”) broadcast services under contract to the FAA, which serves to enhance the positioning accuracy of GPS. *See NPRM* at 39 n.59.⁴ The contract services provided include operating and maintaining four ground earth stations and leasing services from two INMARSAT satellites that carry GPS L1 frequency transponders.

In April 1999, Lockheed Martin sought such authority from the FCC, applying for a license to launch and operate a global augmentation system fully compatible with GPS and its augmentations, including WAAS.⁵ Presently referred to as the Regional Positioning System (“RPS”), Lockheed Martin’s program proposes to provide RNSS from six orbital locations, co-locating up to two spacecraft at each orbital slot, and operating in both the L-band and C-band. Lockheed Martin intends that RPS will be the geostationary component of the global navigation satellite system (“GNSS”), and will satisfy all of the

Release, March 30, 1998) (announcing that a new civil capability would be included in the GPS L2 band).

⁴ WAAS is intended to provide precision guidance to aircraft at thousands of airports and airstrips where there is currently no precision landing capability. WAAS is designed to improve the accuracy and ensure the integrity of information coming from GPS satellites.

⁵ *See* Applications of Lockheed Martin Corporation, FCC File Nos. SAT-LOA-19990427-00045 thru –00050 (filed April 27, 1999) (“RPS Application”).

requirements for GNSS that are currently under development through the International Civil Aviation Organization (“ICAO”).

In its application, Lockheed Martin proposed to operate RPS in the L-band spectrum then-allocated to RNSS. Specifically, it requested authorization for downlinks in the L1 band and the L2 band (1215-1240 MHz). It also sought authority to use the L5 band frequencies that were then under discussion, pending finalization of the signal structure.⁶ With the decision to center the L5 band at 1176.5 MHz, Lockheed Martin would limit its planned operation to this portion of the larger RNSS allocation.⁷

B. GPS Augmentation is Essential to Achieving Enhanced Air Traffic Management Capability and Safety.

1. The Current Air Traffic Management System Is Under Stress.

As Lockheed Martin observed in its Petition, daily airline departures increased dramatically in the United States following deregulation in the late 1970s, and the number of passengers has grown by about 250 percent during the last two decades.⁸ Total airline passenger traffic in the Americas increased by an average of 3.7% per year during the late 1980s and early 1990s.⁹ The tremendous increases in air traffic volume

⁶ See RPS Application at 35-36.

⁷ In June 2000, the United States filed Advance Publication information covering the orbital locations and frequency assignments for the spacecraft of the RPS system with the ITU. Based on the filing date, a deadline of June 2005 is now established under ITU regulations for bringing the frequency assignments into use. Under ITU regulations, this deadline can be extended to June 2007 if a “due diligence” filing is made before 2005 and an acceptable reason for an additional two-year implementation period is proffered.

⁸ See Lockheed Martin Petition at 2, *citing* Don Phillips, “International Traveler Update,” *International Herald Tribune*, at 2 (January 31, 2001).

⁹ *Id.* (*citing* “The Americas’ Air Passenger Traffic - 1985-2011,” Air Transport Action Group, at 8 (1998)).

over the last three decades have placed significant strain on the air traffic management infrastructure. Moreover, enhanced positioning accuracy can enhance air security.

One element of the existing problem is the fact that the current ground-based navigation system has inherent constraints. Limitations on geographic coverage require pilots to fly structured routes, known as “highways-in-the-sky,” which are seldom the most direct or fuel-efficient courses.¹⁰ The routes assigned by the air traffic control (“ATC”) system promote safe travel under the limitations of the present infrastructure, but typically do not permit pilots to take the most direct route, and thus do not allow flying times that reflect the actual distance between the departure point and the destination, or the speed capability of the aircraft.¹¹ Accordingly, there is an urgent need to update the system by increasing the accuracy of positioning information. This will allow the safe reduction of the mandatory separations between aircraft, optimize traffic flow and improve controller productivity.

2. Additional RNSS Spectrum is Critical to Achieving Enhanced GPS.

As described in the *NPRM*, WRC-2000 produced several decisions that have expanded the spectrum available for RNSS and enhanced the utility of existing spectrum available for this service. *See NPRM* at ¶¶ 29-30 & 32-33. Among these steps was the international allocation of the 1164-1215 MHz band, which is part of a larger band available for the aeronautical radionavigation service (“ARNS”), to RNSS on a global co-

¹⁰ *See* U.S. Government Accounting Office, “National Airspace System: Persistent Problems in FAA’s New Navigation System Highlight Need for Periodic Reevaluation, Report No. GAO/RCED/AIMD-00-130, at 6 (June 2000) (“GAO Report”).

¹¹ Testimony of Deborah C. McElroy, President, Regional Airline Ass’n, Before the Subcommittee on Aviation, Committee on Transportation and Infrastructure, United States House of Representatives (June 29, 2000).

primary basis for both space-to-Earth and space-to-space transmissions.¹² As noted, WRC-2000 also modified the RNSS allocations in the existing 1559-1610 MHz and 1215-1240 MHz bands to permit space-to-space transmissions.¹³

In addition to the changes highlighted in the *NPRM*, however, WRC-2000 made other changes in the frequency range of the existing RNSS allocation at 1215-1260 MHz.¹⁴ The addition of new space-to-Earth and space-to-space allocations extended the RNSS band to include the 1260-1300 MHz range as well.

Concurrent with these changes in the international spectrum allocations, the Federal Aviation Administration (“FAA”) has embarked on an extensive program to modernize the means of administering the national airspace in conjunction with private companies. The new spectrum made available by WRC-2000 is critical to the ability of private-sector operators to develop and deploy the complementary satellite facilities to enhance the accuracy of GPS-derived location data and meet the FAA’s needs.

In particular, the 1999 FAA Satellite Navigation Investment Analysis Report, prepared at the direction of Congress, concluded that WAAS was a cost-effective approach to enhancing the air navigation system.¹⁵ The report also concluded that the FAA

¹² See Final Acts of the World Radiocommunication Conference (Istanbul, 2000) at 18 (“WRC-2000 Final Acts”). The use of this new allocation is subject to the limitation that it may neither cause harmful interference to, nor claim protection from, ARNS. See WRC-2000 Final Acts, ITU Radio Regulation 5.328A.

¹³ See WRC-2000 Final Acts, ITU Radio Regulations 5.355A and 5.359A. There is also a co-primary allocation to the ARNS in the 1559-1610 MHz band.

¹⁴ In the original L2 frequency band, the 1215-1240 MHz segment is used for GPS and the 1240-1260 MHz segment is used by the Russian Federation’s Global Navigation Satellite System (“GLONASS”).

¹⁵ See *Satellite Navigation Investment Analysis Report*, FAA, released September 25, 1999.

should lease these services under a performance-based service contract, as they are currently doing, rather than operating its own satellite network. To support the FAA's preferred service approach, it will therefore be necessary for a commercial operator to obtain an FCC license to build and deploy GPS augmentation satellites. Domestic adoption of the new global RNSS allocations will facilitate this effort.

II. DISCUSSION

A. The Commission Should Allocate Domestically the Full 1164-1215 MHz Band Made Available At WRC-2000 For Both Government and Non-Government RNSS Operations (Space-to-Earth) on a Co-Primary Basis.

In its Petition, Lockheed Martin specifically requested that the Commission allocate the entire RNSS band that was made available at WRC-2000 for RNSS – i.e., the 1164-1215 MHz band – and not limit the domestic allocation to the portion thereof that is intended to make up the U.S. L5 band. As Lockheed Martin noted in its Petition, while a U.S. licensee would be expected to limit its operations to the portion of the band used by domestic GPS, there are other RNSS systems proposed for these frequencies that may seek to use the portion of the band above 1189 MHz.¹⁶ The Commission should not act in this allocation rulemaking proceeding in a manner that would be perceived abroad as attempting to exclude the availability of this portion of the global RNSS band for service in North America. If such an exercise should prove necessary in the future, on the basis of technical or regulatory circumstances specific to a particular proposed request for use of the allocation, a licensing proceeding would be the right place for such a determination to be

¹⁶ See Lockheed Martin Petition at 11-12.

made.¹⁷ Nothing the Commission does in an allocation proceeding would be prejudicial to such a subsequent determination.

As detailed above, the aging of the current air traffic control system and the long-term growth of airline passenger traffic have together produced an urgent need for an upgrade in the air navigation infrastructure. The additional allocations made at WRC-2000 for RNSS provide a significant first step toward facilitating this upgrade. Lockheed Martin has already filed an application with the Commission that promises to implement a new service that is made possible by these allocation changes and will promote FAA objectives for the service.

Unfortunately, the *NPRM* departs significantly from Lockheed Martin's request by including only the 1164-1189 MHz portion of the RNSS band in its proposed footnote USyyy, which clearly states that RNSS shall be permitted in these bands subject to the limitation that RNSS "not cause harmful interference to, nor claim protection from, stations in the aeronautical radionavigation service." *NPRM* at ¶ 34. The proposed footnote thus omits the upper portion of the band from the domestic allocation.

The Commission's proposal to limit the domestic implementation of the RNSS spectrum allocated at WRC-2000 is based on a request from the National Telecommunication and Information Administration ("NTIA") made originally in July 2001. *See NPRM* at ¶ 34. NTIA asked at that time that consideration of the portion of the RNSS allocation from 1189-1215 MHz be deferred because the U.S. Government planned

¹⁷ In this regard, Lockheed Martin notes that the entire RNSS "L1" band (1559-1610 MHz) is allocated in Section 2.106 to the RNSS, even though GPS uses only a twenty megahertz portion of that band, and the upper 5 MHz is of questionable utility to RNSS in the U.S. as a result of actions taken domestically with respect to mobile-satellite service handsets in the adjacent 1610-1626.5 MHz band.

to use only the portion of the global RNSS allocation below 1189 MHz for GPS L5 (then 1188 MHz, but since revised upward by 1 MHz). In addition, NTIA stated that uses for the remainder of the RNSS allocation had not yet been defined, nor had technical compatibility studies with ARNS systems been performed.

Although NTIA's observation about compatibility studies was factually correct at the time it was made, circumstances have changed and the state of technical compatibility studies does not now justify a restricted domestic allocation. Lockheed Martin notes that in the last year, technical studies under Resolution 605 (WRC-2000) have been completed for the entire 1164-1215 MHz band. As a result of these studies, a consensus is emerging within the ITU on how to assure by regulation the protection of ARNS systems across the 1164-1215 MHz band from the aggregate emissions of all RNSS satellites and systems.

More specifically, ITU-R studies have produced two new recommendations on the protection of ARNS systems from aggregate emissions of RNSS satellites across the 1164-1215 MHz band, and on methodologies to be used by RNSS systems to determine compliance with the aggregate protection criterion. The studies show that multiple RNSS systems operating across the entire band would not have an adverse impact on existing ARNS systems, *so long as* the equivalent power flux density level produced by all space stations of all RNSS systems will not exceed $-121.5 \text{ dB(W/m}^2\text{)}$ in any 1 MHz band.¹⁸

The approach outlined by these studies provides for management of the total interference caused by RNSS systems through collaborative agreement on the part of the

¹⁸ See Draft New Recommendations ITU-R M.[RNSS1] and M.[RNSS2]. See also Report of Conference Preparatory Meeting on Technical, Operational and Regulatory/Procedural Matters to be Considered by the 2003 World Radiocommunication Conference at Section 1.2.1 (November 2002).

administrations proposing and operating the RNSS systems without the need to establish regulations that might be either arbitrary or inadequate to address actual interference issues. WRC-03 is expected to finalize the regulatory mechanism through which administrations operating RNSS systems in the 1164-1215 MHz band will cooperatively assure that the aggregate protection criterion for ARNS systems is not exceeded.

There is no question that GPS modernization plans are made more complicated by the plans for a European-backed RNSS initiative, known as Galileo, to use spectrum in the same frequency range. It is equally clear to Lockheed Martin, which has actively participated in all facets of the international regulatory deliberations on Resolution 605 that have taken place since 2000, that a U.S. domestic limitation of the allocation to RNSS to 1164-1189 MHz could very well have an adverse impact on the ability of WRC-03 to conclude on protection of ARNS systems in this frequency range. The full-band solution that is emerging internationally is, importantly, viewed as equally applicable to all systems in the band. Any retreat from a full-band solution from the U.S. in domestic regulations could contribute substantially to an unfortunate perception that the U.S. is seeking to freeze out any other RNSS system from access to RNSS spectrum on a global basis.

If the Commission were to allocate the entire band, it would retain maximum flexibility to address authorization questions in individual licensing or letter-of-intent proceedings, to respond rapidly and fully to potential changes in the GPS modernization plans, and to handle on a case-by-case basis requests to operate RNSS in these bands. A decision to adopt domestically the entire WRC-00 allocation to RNSS at 1164-1215 MHz does not prejudice or otherwise prejudice the ability of the Commission (or

more broadly, the U.S. Government) to deny RNSS systems access to the 1189-1215 MHz band should there be valid technical reasons for doing so. The Commission should thus modify Section 2.106 of its Rules to mirror the international allocation table (as shown in the U.S. WRC-03 proposal on Resolution 605).

As a final point, Lockheed Martin believes that both the completion of the necessary studies contemplated by Resolution 605 and the resulting growing international consensus concerning the operational limitations required to assure protection of the ARNS now render the proposal for footnote USyyy unnecessary – even as to the 1164-1189 MHz band. Lockheed Martin, which was the proponent of such a full-band note back in 2001, now realizes that the unique regulatory approach that is reflected in the U.S. proposals to WRC-03 as a result of ITU-R studies is all that is required.¹⁹ In particular, the obligation in proposed note USyyy to have RNSS systems neither cause harmful interference to, nor claim protection from, aeronautical radionavigation service systems may be perceived as creating an additional or, at least, inconsistent obligation on RNSS systems as contrasted with the modification to No. 5.328A of the Radio Regulations that is proposed in the CITEL IAP on Resolution 605 (see Attachment 1). The United States should not impose domestic limitations that create a burden on RNSS systems in the L5 band that is inconsistent with the technical determinations that have been developed in international

¹⁹ A copy of the Inter-American Proposals to WRC-03 on Resolution 605 (WRC-2000), which were adopted by the U.S. and seven other countries at last week's meeting of the Inter-American Committee on Telecommunications ("CITEL PCC.II"), is included as Attachment 1 to these comments. (The changes agreed at the CITEL PCC.II meeting have been accepted into the document, so that the only redlining is against the current ITU Radio Regulations.) Additional CITEL member states are expected to sign on the IAP for Resolution 605 in the coming weeks. The U.S. has worked extremely diligently over the last three years within the ITU and associated regional organizations such as CITEL to develop such a proposal and to position it for implementation at WRC-03.

technical fora. For this reason, proposed note USyyy to Section 2.106 is no longer necessary.

The technical solution to sharing with the aeronautical radionavigation service that has been adopted in the ITU applies across the 1164-1215 MHz band. Considerations regarding sharing among RNSS systems in this band have been part of the discussions and are part of the solution that is reflected in the U.S. proposal. Allocation proceedings are not the place to address specific intra-RNSS coordination concerns – concerns that are not even specifically identified by the Commission – with respect to individual systems. The full 1164-1215 MHz band should thus be allocated in this proceeding.

B. The Commission Should Permit Both The 1164-1215 MHz and 1559-1610 MHz Bands To Be Used For Space-to-Space Transmissions.

In addition to making the entire band at 1169-1215 MHz available for space-to-Earth transmissions, WRC-2000 made both this spectrum and the L1 band at 1559-1610 MHz available for transmissions in the space-to-space direction.²⁰ This allocation came largely as a result of the efforts of the U.S. Government, spearheaded by the National Aeronautics and Space Administration (“NASA”), to secure interference protection for space-to-space transmissions in the spectrum used by GPS.

Lockheed Martin strongly concurs with the Commission’s proposal to incorporate this primary allocation for space-to-space transmissions in the domestic tables in addition to the space-to-Earth designations. *See NPRM* at ¶ 43. Just as space-based users have been able to make use of GPS transmissions, they should also be able to utilize the signals of GPS augmentations that will provide even greater accuracy and integrity for

²⁰ *See* WRC-2000 Final Acts at 18 (RR No. 5.328A) and 20 (Art. 5).

GNSS. Because of the many applications that can be offered using this spectrum, the Commission should explicitly adopt the interference protections that inclusion in the Table of Frequency Allocations affords.

C. The Commission Should Remove the Government-Only Restriction From the L2 Band and Conform the Domestic Allocation to the Actions Taken at WRC-2000.

In its pending RPS application, recognizing that the current GPS L2 spectrum at 1215-1240 MHz has been restricted to Federal Government use, Lockheed Martin requested a waiver of this limitation to permit GPS augmentation in this band.²¹ In 1998, the U.S. Government announced that a second civil signal would be added to GPS in the L2 band (1215-1240 MHz). This change to prior U.S. policy was not embraced within the U.S. Government, however, until well after both WRC-2000 and the filing of Lockheed Martin's Petition.

In light of this policy change regarding civil use of the RNSS L2 band, the Commission should take the opportunity presented by this proceeding both to remove the government-only restriction from the L2 band and also to conform the domestic allocation to the actions taken at WRC-2000. That is, because the global RNSS allocation now extends to the entire 1215-1300 MHz band, the Commission should also make this spectrum available domestically for RNSS.

With respect to the second element of this proposal, ITU-R studies confirm the historic technical compatibility of radionavigation and radiolocation service radars with RNSS systems. Operational experience with GPS and the Russian Federation's GLONASS system in the 1215-1260 MHz frequency range over the last 20 years has

²¹ See Lockheed Martin RPS Application at 35-36.

demonstrated that co-primary sharing between RNSS and radars can be accomplished without harmful interference. Indeed, in ITU-R discussions, the U.S. has supported RNSS across the band with no change to the Radio Regulations, although it has recently expressed a willingness to support the inclusion of footnotes and an associated resolution that assure protection of radars from future RNSS operations.

In view of the U.S. Government's agreement at WRC-2000 to support the expansion of the RNSS allocation to the 1260-1300 MHz band, a failure to amend the domestic allocation table to include these frequencies (along with the 1240-1260 MHz segment) would lead to the same types of potential anticompetitive concerns that are being raised internationally with respect to the proposed exclusion of the 1189-1215 MHz RNSS band from the allocation table in Section 2.106 of the Commission's Rules. For this reason as well, the Commission should modify the U.S. Table to make the 1260-1300 MHz band available to both government and non-government users for RNSS.²²

D. While It May Be Procedurally Appropriate to Defer to a Separate Proceeding Modifications to Part 25 to Include the RNSS Bands, the Commission Should Not Delay the Steps Necessary to License Systems in These Bands.

The *NPRM* departs in one other significant respect from the proposal that was advanced Lockheed Martin's Petition. In its Petition, Lockheed Martin included a

²² Lockheed Martin observes that its proposal to use L2 frequencies on RPS, while formally a non-government use, is limited to government purposes and will satisfy government objectives. This situation is expressed in the request for waiver of Section 2.106 that is included in the RPS application. Should the Commission, notwithstanding the addition of a civil signal to GPS in the L2 band, not be prepared to revise its rules in the manner suggested here by Lockheed Martin (or perhaps some more limited fashion that addresses service of government objectives by non-government users), Lockheed Martin will continue to pursue its waiver of Section 2.106 for the reasons it initially provided.

separate request for the addition of RNSS to the list of frequency bands available for satellite services under Section 25.202(a).²³ In the *NPRM*, however, the Commission concludes that it would be premature to modify Part 25 of its rules at this time to include the RNSS frequencies allocated at WRC-2000. The Commission states that “[s]uch action would be more appropriate in connection with service and licensing rules for the RNSS frequency bands, and following development of international technical criteria for operations in these bands.” *NPRM* at ¶ 43.

From a procedural standpoint, it is not inconsistent with precedent for the Commission to defer consideration of modifying Section 25.202 to a separate service rules proceeding, which would not only consider the addition of the RNSS frequency bands to Part 25, but would also establish specific operating requirements for the service. In reserving action on this part of Lockheed Martin’s proposal, however, the Commission should ensure that this approach does not delay the authorization of RNSS systems for which applications are now pending. Because Lockheed Martin’s application for the RPS system was filed almost four years ago, and Advance Publication materials were submitted by the Commission to the ITU in June 2000, the ITU’s “bringing into use” clock under Article 11 of the Radio Regulations has been ticking for almost three years. A delay in Commission action on U.S. authorizations would preclude Lockheed Martin from satisfying ITU due diligence requirements. Accordingly, to the extent that action to amend Part 25 to adopt rules for provision of RNSS may be considered necessary prior to grant of satellite authorizations, the Commission should move expeditiously to initiate and conduct such a rulemaking.

²³ See Lockheed Martin Petition at 13-14.

E. The Commission Should Not Permit Active Sensor Operation in the Earth Exploration-Satellite Service and the Space Research Service on a Co-Primary Basis with RNSS in the Band 1215-1300 MHz Without Further Study.

Despite its proposal to allocate new spectrum for RNSS downlinks, the Commission makes proposals elsewhere in the *NPRM* that may be incompatible with the integrity of existing RNSS allocations in the bands 1215-1240 MHz, as well as the additional global allocation from 1240-1300 MHz. Specifically, the Commission suggests that it might be appropriate to elevate secondary allocations to primary allocation status and add additional spectrum for the Earth exploration-satellite service (“EESS”) and the space research service (“SRS”) in these bands, including active sensor operation. *See NPRM* at ¶ 69.

While preserving the status quo in these bands should not have any adverse effect on RNSS deployment, the proposed introduction of EESS and SRS active sensor operations poses a threat of harmful interference to RNSS systems that must be considered in these bands. At the same time, and recognizing the prohibitions of No. 5.332 of the ITU Radio Regulations, there exists at least the potential that active sensor operations could be compromised in these bands if operating co-frequency with RNSS. These matters have to be studied.

III. CONCLUSION

For all of the foregoing reasons, Lockheed Martin urges the Commission to proceed quickly to allocate the band 1164-1215 MHz to the RNSS. This action, unlike the allocation proposal in the *NPRM*, would be consistent with the U.S. proposal on Resolution

605 to WRC-03 and with comprehensive studies in the ITU-R. The Commission should also allocate the 1260-1300 MHz band domestically to the RNSS, and it should remove the “government-only” restriction that currently applies at 1215-1240 MHz from the entire 1215-1300 MHz band. Finally, the Commission should modify the current allocations at 1559-1610 MHz and 1215-1240 MHz to add the space-to-space direction.

Adoption of each of the new and modified spectrum allocations will foster improved aviation flight safety, and promote continued U.S. leadership in the satellite-based radio-navigation and positioning equipment markets. Non-government use will necessarily be fully compatible with, and complementary to, the current GPS service and its augmentations. Most importantly, it will enable the private sector to assume a greater role in the resource-intensive modernization of the U.S. air traffic management system, which is critical to maintaining safe operations.

The Commission, however, must not delay in taking action so that these promised benefits may be achieved. Time is already growing short to realize timely implementation of the GPS augmentation system that Lockheed Martin has proposed. As

noted above, the United States submitted Advance Publication Information for RPS in the 1164-1215 MHz band to the ITU nearly three years ago. As a result, the clock is already ticking on compliance with the ITU's strengthened due diligence requirements.

Respectfully submitted,

LOCKHEED MARTIN CORPORATION

Of Counsel:

Raul R. Rodriguez
Stephen D. Baruch
David S. Keir
Leventhal, Senter & Lerman PLLC
2000 K Street, N.W., Suite 600
Washington, D.C. 20006
(202) 429-8970

February 10, 2003

By: /s/ Gerald Musarra

Gerald Musarra
Vice President
Trade and Regulatory Affairs

Lockheed Martin Corporation
Crystal Square 2, Suite 403
1725 Jefferson Davis Highway
Arlington, Virginia 22202

ATTACHMENT 1



**ORGANIZACION DE LOS ESTADOS AMERICANOS
ORGANIZATION OF AMERICAN STATES**

Comisión Interamericana de Telecomunicaciones

Inter-American Telecommunication Commission

**I MEETING OF PERMANENT
CONSULTATIVE COMMITTEE II:
RADIOCOMMUNICATIONS
INCLUDING BROADCASTING
February 3 to 7, 2003
Orlando, Florida, United States**

**OEA/Ser.L/XVII.4.2
CCP.II-RADIO/doc. 202/03
7 February 2003
Original: English**

INTER-AMERICAN PROPOSALS FOR CHAPTER 1

(Item on the Agenda: 5.1)

(Document submitted by the Coordinator for Chapter 1)

*** * ***



**ORGANIZACION DE LOS ESTADOS AMERICANOS
ORGANIZATION OF AMERICAN STATES**

Comisión Interamericana de Telecomunicaciones

Inter-American Telecommunication Commission

Agenda Item 1.15. to review the results of studies concerning the radionavigation-satellite service in accordance with Resolutions 604 (WRC-2000), 605 (WRC-2000) and 606 (WRC-2000);

Resolution 605

Background: WRC-2000 introduced new allocations in the band 1 164-1 215 MHz for use by the radionavigation-satellite service (RNSS) (space-to-space) and (space-to-Earth) with a provisional aggregate power-flux-density (pfd) limit of -115 dB (W/m²) in any 1 MHz band produced at the Earth's surface by all space stations within all RNSS systems and for all angles of arrival. It also stated in **5.328A** of the Radio Regulations that the provisions of Resolution **605 (WRC-2000)** apply. There was extensive discussion at WRC-2000 with regard to the need for a pfd limit and the value needed to protect aeronautical radionavigation service (ARNS) systems (including Distance Measuring Equipment (DME)). Resolution **605 (WRC-2000)** requested the ITU-R to study the technical, operational, and regulatory aspects of compatibility between RNSS and ARNS in the band 960-1 215 MHz, including an assessment of the need for an aggregate pfd limit. If such a need exists, the ITU-R was requested to revise, if necessary the provisional pfd limit given in **5.328A** concerning the operation of RNSS systems in the frequency band 1 164 – 1 215 MHz.

The ITU-R has determined that ARNS systems require protection from the aggregate of emissions from RNSS systems and networks that collectively exceed an equivalent power flux-density level of -121.5 dB (W/m²) in any 1 MHz produced at the Earth's surface. Addressing Resolution **605 (WRC-2000)**, there is a strong need for both use of the RNSS spectrum and the continued operation of ARNS systems in the 1 164-1 215 MHz band to assure protection of current and future ARNS systems operating in the same band as RNSS from harmful interference. This protection needs to be provided without unnecessarily delaying or hindering the implementation and provision of RNSS.

Based on its studies, the ITU has identified single regulatory approach for achieving the meaningful protection of the ARNS without unduly constraining RNSS development and operation. This approach mandates the provision of aggregate interference protection at the level identified in ITU-R studies, but commits enforcement of the requirement to those administrations that actually operate and actually intend to operate RNSS systems. The approach manages the total amount of interference caused by these systems through the collaborative agreement on the part of administrations proposing and operating the RNSS systems that are established through regular consultation meetings attended by representatives of all filed RNSS systems. The new consultation process will be used to ensure that the aggregate epfd criterion for the protection of ARNS systems will not be exceeded; and neither ARNS systems nor RNSS operators are faced with artificial or insufficient regulations that could leave them exposed to interference or forced to make unnecessary adjustments that inhibit the efficient use of the orbital/spectrum resource. The approach also takes account of the Radio Regulations Board (RRB) concern about having multiple inconsistent regulations applicable to the same band.

This approach requires the use of a set of milestones to ensure that only “real” RNSS systems are considered when making interservice interference assessments.

Proposal:

IAP/1.15(Res 605)/ 1
(MOD)

Support: Argentina, Brazil, Canada, Colombia, Costa Rica, El Salvador, Honduras, Mexico, Paraguay, Peru, United States, Venezuela

[Antigua and Barbuda], [Commonwealth of Bahamas], [Barbados], [Belize], [Bolivia], [Chile], [Commonwealth of Dominica], [Ecuador], [Grenada], [Guatemala], [Guyana], [Haiti], [Jamaica], [Nicaragua], [Panama], [Dominican Republic], [Saint Lucia], [Saint Vincent and the Grenadines], [Saint Kitts and Nevis], [Suriname], [Trinidad and Tobago], [Uruguay]

960-1 215 MHz

Allocation to services		
Region 1	Region 2	Region 3
960-1 215	AERONAUTICAL RADIONAVIGATION 5.328 MOD 5.328A	

Reasons: Consequential change.

IAP/1.15(Res 605)/ 2
NOC

Support: Argentina, Brazil, Canada, Colombia, Costa Rica, El Salvador, Honduras, Mexico, Paraguay, Peru, United States, Venezuela

[Antigua and Barbuda], [Commonwealth of Bahamas], [Barbados], [Belize], [Bolivia], [Chile], [Commonwealth of Dominica], [Ecuador], [Grenada], [Guatemala], [Guyana], [Haiti], [Jamaica], [Nicaragua], [Panama], [Dominican Republic], [Saint Lucia], [Saint Vincent and the Grenadines], [Saint Kitts and Nevis], [Suriname], [Trinidad and Tobago], [Uruguay]

5.328

Reasons: The current text is adequate.

IAP/1.15(Res 605)/ 3
MOD

Support: Argentina, Brazil, Canada, Colombia, Costa Rica, El Salvador, Honduras, Mexico, Paraguay, Peru, United States, Venezuela

[Antigua and Barbuda], [Commonwealth of Bahamas], [Barbados], [Belize], [Bolivia], [Chile], [Commonwealth of Dominica], [Ecuador], [Grenada], [Guatemala], [Guyana], [Haiti], [Jamaica], [Nicaragua], [Panama], [Dominican Republic], [Saint Lucia], [Saint Vincent and the Grenadines], [Saint Kitts and Nevis], [Suriname], [Trinidad and Tobago], [Uruguay]

5.328A *Additional allocation:* the band 1 164-1 215 MHz is also allocated to the radionavigation-satellite service (space-to-Earth) (space-to-space) on a primary basis. ~~The aggregate power flux density produced by all the space stations of all radionavigation satellite systems at the Earth's surface shall not exceed the provisional value of 115 dB(W/m²) in any 1 MHz band for all angles of arrival. Stations in the radionavigation-satellite service in the band 1 164-1 215 MHz shall not cause harmful interference to, nor claim protection from, stations of the aeronautical radionavigation service.~~ operate in accordance with the provisions of Resolution **RNSS-1 (WRC-03) 605 (WRC-2000)** and shall not claim protection from stations in the aeronautical-radionavigation service. No. 5.43A does not apply. No. 9.7 shall not apply to the use of the band 1 164-1 215 MHz by the radionavigation-satellite service. The provisions of No. 21.18 apply.

Reasons: The suppression of the second and modification of the third sentence reflect the incorporation into new Resolution **RNSS-1 (WRC-03)** and associated Radio Regulations (see below) of the mechanisms for ensuring the protection of ARNS against harmful interference from RNSS systems.

Discussions between RNSS administrations during the consultation meetings are critical to the success of the regulatory determination to commit to administrations the obligation to ensure that the aggregate protection criterion of the ARNS is satisfied. Thus, the new provision in new **No. 21.18** (see below) is specifically referenced

IAP/1.15(Res 605)/ 4
ADD

Support: Argentina, Brazil, Canada, Colombia, Costa Rica, El Salvador, Honduras, Mexico, Paraguay, Peru, United States, Venezuela

[Antigua and Barbuda], [Commonwealth of Bahamas], [Barbados], [Belize], [Bolivia], [Chile], [Commonwealth of Dominica], [Ecuador], [Grenada], [Guatemala], [Guyana], [Haiti], [Jamaica], [Nicaragua], [Panama], [Dominican Republic], [Saint Lucia], [Saint Vincent and the Grenadines], [Saint Kitts and Nevis], [Suriname], [Trinidad and Tobago], [Uruguay]

Section VI – Protection of aeronautical radionavigation service systems from aggregate emissions of space stations of radionavigation-satellite service systems in the 1 164-1 215 MHz band

21.18 § 7 Administrations operating or planning to operate radionavigation-satellite service systems or networks in the 1 164-1 215 MHz frequency band, for which complete coordination or notification information, as appropriate, was received by the Bureau after 2 June 2000, shall, in accordance with *resolves* 2 of Resolution **RNSS-1 (WRC-03)**, take all necessary steps to ensure that the actual aggregate interference into aeronautical radionavigation service systems caused by such RNSS systems or networks operating co-frequency in these frequency bands does not exceed the equivalent power flux-density level shown in *resolves* 1 of Resolution **RNSS-1 (WRC-03)**.

Reasons: Article **21** of the Radio Regulations addresses sharing between terrestrial and space services in frequency bands above 1 GHz. Placement of this provision in a new Section **VI** of Article **21** brings into the Radio Regulations the critical elements from new Resolution **RNSS-1 (WRC-03)** (see proposal below) that make mandatory the collective obligation of administrations operating RNSS systems at 1 164-1 215 MHz to ensure that the aggregate protection criterion from *resolves* 1 of Resolution **RNSS-1** is not exceeded, as well as the requirement to reduce emissions if administrations operating ARNS systems identify excess emission levels.

IAP/1.15(Res 605)/ 5
ADD

Support: Argentina, Brazil, Canada, Colombia, Costa Rica, El Salvador, Honduras, Mexico, Paraguay, Peru, United States, Venezuela

[Antigua and Barbuda], [Commonwealth of Bahamas], [Barbados], [Belize], [Bolivia], [Chile], [Commonwealth of Dominica], [Ecuador], [Grenada], [Guatemala], [Guyana], [Haiti], [Jamaica], [Nicaragua], [Panama], [Dominican Republic], [Saint Lucia], [Saint Vincent and the Grenadines], [Saint Kitts and Nevis], [Suriname], [Trinidad and Tobago], [Uruguay]

RESOLUTION RNSS-1 (WRC-2003)

Protection of aeronautical radionavigation service systems from the equivalent power flux-density produced by radionavigation-satellite service networks and systems in the 1 164-1 215 MHz frequency band

The World Radiocommunication Conference (Geneva, 2003),

considering

a) that the band 960-1 215 MHz is allocated on a primary basis to the aeronautical radionavigation service (ARNS) in all Regions;

b) that the band 1 164-1 215 MHz is also allocated on a primary basis to the radionavigation-satellite service (RNSS), subject to the condition in **No. 5.328A** that operation of RNSS systems shall be in accordance with this Resolution;

c) that this Conference has determined that protection of the ARNS from harmful interference can be achieved if the value of the equivalent power flux-density (epfd) produced by all the space stations of all RNSS (space-to-Earth) systems in the 1 164-1 215 MHz band does not exceed the level of $-121.5 \text{ dB(W/m}^2\text{)}$ in any 1 MHz band;

d) that WRC-2000 adopted Resolution **605 (WRC-2000)** to provide for implementation of a provisional aggregate power flux-density limit during the period between WRC-2000 and WRC-2003, and requested ITU-R studies on the need for an aggregate pfd limit, and revision, if necessary, of the provisional pfd limit given in No. **5.328A**;

e) that only a limited number of RNSS systems are expected to be deployed in the 1 164-1 215 MHz band, and only a few of these systems at most would have overlapping frequencies;

f) that ARNS systems can be protected without placing undue constraints on the development and operation of RNSS systems in this band;

g) that to achieve the objectives in *considering* f), administrations operating RNSS systems will need to agree cooperatively through consultation meetings to equitably share the aggregate epfd in a manner to achieve the level of protection for ARNS systems that is stated in *considering* c);

h) that it may be appropriate for representatives of administrations operating ARNS systems to be involved in determinations made pursuant to *considering* g);

noting

a) WRC-2000 invited the ITU-R to conduct, the appropriate technical, operational and regulatory studies on the overall compatibility between the radionavigation-satellite service and the aeronautical radionavigation service in the band 960-1 215 MHz,

b) WRC-2000 resolved to recommend that WRC-03 review the results of the studies;

resolves

1 that, in order to protect ARNS systems, administrations shall ensure, pursuant to this resolution, that the equivalent pfd level produced by all space stations of all RNSS systems does not exceed the level $-121.5 \text{ dB(W/m}^2\text{)}$ in any 1 MHz band;

2 that administrations operating or planning to operate in the 1 164-1 215 MHz frequency band RNSS systems or networks for which complete coordination or notification information, as appropriate, was received by Radiocommunication Bureau after 2 June 2000, in collaboration, shall take all necessary steps, including by means of appropriate modifications to their systems or networks, to ensure that the aggregate interference into ARNS systems caused by such RNSS systems or networks operating co-frequency in these frequency bands is shared equitably among

the systems identified in *resolves 3* and does not exceed the level of the aggregate protection criterion given in *resolves 1* above;

3 that administrations, in carrying out their obligations under *resolves 1* and *2* above, shall take into account only those RNSS systems with frequency assignments in the band 1 164-1 215 MHz that have met the milestones listed in the Annex to this Resolution through appropriate information provided to the consultation meetings referred to in *considering g*);

4 that no single RNSS system shall be permitted to use up the entire interference allowance specified in *resolves 1* above in any 1 MHz of the 1164-1215 MHz band;

5 that administrations shall communicate to the Bureau the results of any aggregate sharing determinations made in application of *resolves 2* above, without regard to whether such determinations result in any modifications to the published characteristics of their respective systems or networks;

6 that administrations operating ARNS systems in the 1 164-1 215 MHz band should participate, as appropriate, in discussions and determinations relating to the resolves above,

7 that the methodology contained in Draft New Recommendations ITU-R M.[RNSS2] (8D/TEMP/185Rev1) shall be used by administrations for calculating the aggregate epfd produced by all the space stations within all RNSS systems in the band 1 164-1 215 MHz

urges administrations

to deal with RNSS intersystem matters as required, as early as possible;

ANNEX TO RESOLUTION [RNSS-1] (WRC-03)

Milestone Criteria for Application of Resolution RNSS

1. Submission of appropriate ITU Advance Publication, and Coordination or Notification documentation.
2. Entry into satellite manufacturing or procurement agreement, and entry into satellite launch agreement:

The RNSS system or network operator should possess (i) clear evidence of a binding agreement for the manufacture or procurement of its satellites, and (ii) clear evidence of a binding agreement to launch its satellites. The modification or procurement agreement should identify the contract milestones leading to the completion of manufacture or procurement of satellites required for the service provision, and the launch agreement should identify the launch date, launch site and launch service provider. The Notifying Administration is responsible for authenticating the

evidence of agreement and providing such evidence to other interested administrations in furtherance of its obligations under this Resolution.

3. In lieu of satellite manufacturing and launch agreements, clear evidence of irreversible funding arrangements for the project would be accepted. The Notifying Administration is responsible for authenticating the evidence of the financial commitment and for providing such evidence to other interested administrations in furtherance of its obligations under this Resolution. **Reasons:** This resolution and annex, along with incorporating provisions in Articles **5** (MOD **5.328A**) and **21** (ADD Section VI), provides the mechanism by which administrations operating or planning to operate RNSS systems, all of which also operate co-frequency ARNS systems, will undertake the responsibility for ensuring the protection of ARNS systems. The resolution recognizes that there is a need for discussions between and among administrations operating RNSS systems to ensure compliance with the obligation to protect ARNS systems, and that such discussions may involve administrations operating ARNS systems. Resolution **RNSS-1** thus provides a basis for managing the total aggregate interference caused to ARNS systems by real RNSS systems.

**IAP/1.15(Res 605)/ 6
SUP**

Support: Argentina, Brazil, Canada, Colombia, Costa Rica, El Salvador, Honduras, Mexico, Paraguay, Peru, United States, Venezuela

[Antigua and Barbuda], [Commonwealth of Bahamas], [Barbados], [Belize], [Bolivia], [Chile], [Commonwealth of Dominica], [Ecuador], [Grenada], [Guatemala], [Guyana], [Haiti], [Jamaica], [Nicaragua], [Panama], [Dominican Republic], [Saint Lucia], [Saint Vincent and the Grenadines], [Saint Kitts and Nevis], [Suriname], [Trinidad and Tobago], [Uruguay]

RESOLUTION 605 (WRC-2000)

Reasons: This resolution is no longer needed because of the changes made to **5.328A**, the addition of Section **VI** to Article **21** and the addition of Resolution **RNSS-1**.
